

REMARKS AND RESPONSES

Claims 1, 7, 9 and 14 have been currently amended. Claims 1 and 3-18 remain pending in the present application. Support for the amendments is found in the specification and claims as filed. Accordingly, the amendments do not constitute the addition of the new matter. Reconsideration of the application in view of the foregoing amendments and following comments is respectfully requested.

Claim Rejections - 35 U.S.C. § 112

Claims 1, 7, 9 and 14 stand rejected under 35 U.S.C. § 112, first paragraph because they recites the limitation “the control unit / MCU driver / driver IC directly outputs an over voltage signal”, which is not supported by the original disclosure.

Claims 1, 7, 9 and 14 have been amended to remove above-mentioned limitations, and can be supported by paragraphs [0014],[0015],[0017],[0018] of the original specification without introducing new matter. Therefore, the rejections under 35 U.S.C. §112 should be withdrawn.

Claim Rejections - 35 U.S.C. § 103

Claims 1 and 3-18 stand rejected under 35 U.S.C. §103(a) as unpatentable over Hollenbeck (US 5,513,053) in view of Krohn (US 5,076,761).

Claim 1 has been amended to include the novel feature “when a voltage level of the part is larger than a predetermined reference voltage in the control unit, the control unit stops driving the DC motor to cease operations of the DC motor.”

As the Examiner mentioned, Hollecbecks’s device differs from the present in that the control unit (or MCU) does not stop driving the motor in response to an over voltage signal as the over voltage is detected during the slowing of the motor. The Examiner also asserted that Krohn teaches “the control unit directly outputs an over voltage signal (803) to stop driving the motor”. However, Krohn simply teaches (see col. 4, line 65- col. 5, line2) “a signal is generated on line (803) to inhibit motor drive signals from the motor control unit”. Thus, Krohn’s teaching does not suggest the limitations “the control unit stops driving the DC motor to cease operations of the DC motor”, as recited in amended claim 1.

Claim 7 has been amended to include the feature “when the terminal voltage of the second resistor is larger than a predetermined reference voltage in the micro control unit driver, the micro control unit stops driving the DC motor by using programs.”

As the Examiner mentioned, Hollecbecks’s device differs from the present in that the control unit (or MCU) does not stop driving the motor in response to an over voltage signal as the over voltage is detected during the slowing of the motor. The Examiner also asserted that Krohn teaches “the control unit directly outputs an over voltage signal (803) to stop driving the motor”. However, Krohn simply teaches (see col. 4, line 65- col. 5, line2) “a signal is generated on line (803) to inhibit motor drive signals from the motor control unit”. Thus, Krohn’s teaching does not suggest the limitations “the micro control unit stops driving the DC motor by using embedded programs”, as recited in amended claim 7.

Claim 9 has been amended to include the feature “when a voltage at the non-inverted input end of the operation amplifier is larger than a voltage at the inverted input end, the operation amplifier outputs an overvoltage interrupt signal to the control unit to crease the control unit from driving the DC motor”.

As the Examiner mentioned, Hollecbecks’s device differs from the present in that the control unit (or MCU) does not stop driving the motor in response to an over voltage signal as the over voltage is detected during the slowing of the motor. The Examiner also asserted that Krohn teaches “the control unit directly outputs an over voltage signal (803) to stop driving the motor”. However, Krohn simply teaches (see col. 4, line 65 - col. 5, line2) “a signal is generated on line (803) to inhibit motor drive signals from the motor control unit”. Thus, Krohn’s teaching does not suggest the limitations “the operation amplifier outputs an overvoltage interrupt signal to the control unit to crease the control unit from driving the DC motor”, as recited in amended claim 9.

Claim 14 has been amended to include the feature “when a voltage at the non-inverted input end is larger than a voltage at the inverted input end, the comparator outputs an overvoltage interrupt signal to the drive IC to stop driving the DC motor”.

As the Examiner mentioned, Hollecbecks’s device differs from the present in that the control unit (or MCU) does not stop driving the motor in response to an over voltage signal as the over voltage is detected during the slowing of the motor. The Examiner also asserted that Krohn teaches “the control unit directly outputs an over voltage signal (803) to stop driving the motor”. However, Krohn simply teaches (see col. 4, line 65- col. 5, line2) “a signal is generated on line (803) to inhibit motor drive signals from the motor control

unit". Thus, Krohn's teaching does not suggest the limitations "the comparator outputs an overvoltage interrupt signal to the drive IC to stop driving the DC motor", as recited in amended claim 14.

In summary, Hollenbeck and Krohn, either alone or in combination, would not suggest or teach each and every feature of amended claims 1, 7, 9 and 14. Accordingly, the novel features of claims 1, 7, 9 and 14 produce new and unexpected results and hence are unobvious and patentable over these references. Their dependants are also patentable. Accordingly, Applicant respectfully submits that the rejections under 35 U.S.C. §103(a) should be withdrawn.

Reconsideration and withdrawal of this rejection are respectfully requested.


Conclusions

For all of the above reasons, applicants submit that the specification and claims are now in proper form, and that the claims define patentably over prior arts. Therefore applicants respectfully request issuance for this case at the Office Action's earliest convenience.

If the Examiner has any questions concerning the present amendment, the Examiner is kindly requested to contact the undersigned at (408) 749-6903. If any other fees are due in connection with filing this amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No. JLINP171/TLC). A duplicate copy of the transmittal is enclosed for this purpose.

Respectfully submitted,

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